

SOCIAL STATUS INFLUENCE ON IMPLICIT BIAS

A Thesis

by

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This thesis meets the standards for scope and quality of
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ABSTRACT

Stereotypes help us quickly make sense of the world by categorizing people into groups and making assumptions about them based off this group membership. According to Social Role Theory, stereotypes form by observing gender disparities in social roles and are changed by encounters with individuals in counter-stereotypic positions. This study examined implicit pro-White and implicit pro-male bias in two experiments, by having participants interact with a White or Hispanic and male or female confederate, in either a superior (i.e., PhD student) or peer social status (i.e., undergraduate student). Additionally, first-year and long-term student cohorts provided a test of stereotype suppression due to prolonged exposure to counter-stereotypic exemplars frequent at a Hispanic-serving university environment. Implicit ethnic and gender biases of competence were measured through use of the IAT. The two experiments did not yield significant results, however based on reviewed literature of prior implicit bias studies, we believe that interacting with marginalized individuals in counter-stereotypic roles (i.e., superior position) and long-term environments should serve to manipulate implicit bias. Manipulation and methodological issues are discussed.

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INTRODUCTION

“There’s a Mexican, a Black guy, and a White one, they all walk into a bar...” we’ve all heard a joke or two that started off similarly to this - the punchline that has some stereotypic premise to it. A possible reason for the frequency and familiarity of jokes centered around stereotypes is that they are quickly and widely understood due to the nature of stereotypes (Park, Gabbadon, & Chernin, 2006). You may or may not laugh at the end of the joke, but does your ability to sense the humor reflect that you possess a non-conscious stereotype that is racially biased?

Stereotyping is simply the automatic process of attributing certain traits, behaviors, and/or characteristics to an individual based on their group membership (Bodenhausen & Richeson, 2010). In general, stereotyping serves the beneficial function of quick and efficient processing of social information. This automatic generalization about groups helps one reduce the complexity of a world in which we are bombarded with hundreds of different stimuli/distracters every single moment (Bodenhausen & Richeson, 2010). The stereotypes that we hold are simply the cognitive schema (i.e., organized concepts of patterns and characteristics that are used to process new information) of groups, which may be flattering or may be disparaging. Because stereotypes are unconscious inferences, they are subject to errors. Errors occur when we over-generalize disparaging stereotypes, which may lead to prejudice. Prejudice is the deleterious evaluation, and thus the unfavorable and adverse attitude, toward members of a particular group. Some argue that stereotyping and prejudice/bias are two distinct cognitive processes, with stereotyping being an implicit/automatic process and prejudice being explicit/deliberate (Devine, 1989; Fazio, 1990; Greenwald & Banaji, 1995). The present experiment examined influential factors on the malleability of social biases, namely female

gender bias and Hispanic ethnic bias. Although we understand and recognize that differences between groups such as Hispanics and Whites is a matter of ethnicity, throughout this paper ethnic and racial biases will both simply be referred to as racial biases.

Nature of Stereotypes

The evidence that children as young as 10 months old are able to form stereotypic associations suggests that this is a fairly rudimentary social categorization process humans possess (Levy & Haaf, 1994; Martin & Ruble, 2010). Devine (1989) proposed that stereotypes are socially learned and shared through the influence of family members, the media, group members, etc. Devine (1989) further suggests that although your individual evaluation of the accuracy of these shared stereotypes may not exactly align with the stereotype, they are still automatically activated any time you come in contact with a member from that group. Fazio (1990), on the other hand, argues that although stereotypes are automatically elicited by coming into contact with group members, they are not necessarily socially shared. Fazio, Jackson, Dunton, and Williams (1995) contest that if stereotypes were indeed socially shared, we would not see the variability in scores we have from implicit measures, because those non-conscious attitudes would be the same for all. Instead, Fazio et al. (1995) affirm that the automatic stereotypes one holds are a product of their specific individual experiences rather than being universal.

Barden, Maddux, Petty, and Brewer (2004) argue one of our most useful stereotypes are those of social roles because we are able to gain a greater amount of insight about a member of a group based on their social role versus what simply meets the eye (e.g., race, gender). This notion seems to be inherently true when one stops to think that one of the first questions we ask when meeting someone new is, “What do you do for a living?” For example, at your first

encounter with an individual, you might look at their appearance to quickly try to gain information about them, taking into account their gender and race to classify them, but these are still fairly broad categories. From their gender you might assume them to be independent or not, or perhaps from their race you assume that they strongly value family. These are still fairly generic characteristics though. Upon asking what that individual does for a living however, you learn they are a doctor, within this social role you can then make a further extent of assumptions about them. You can assume they are intelligent and hardworking, because they were able to make it all the way through medical school. Additionally, you are likely to believe they are compassionate and caring considering they chose to enter the medical field to help people. The social role of “doctor” can provide a much richer wealth of information than the gender or racial categories, and it is for this reason that Barden et al. (2004) argues that a social role is the most beneficial stereotype.

Gender Stereotypes

According to Eagly’s Social Role Theory, gender stereotypes are learned and maintained by observing unequal distributions of men and women in various social roles (Eagly, 1987; Eagly & Steffen, 1984). Upon observing these differences in role distribution one might observe a member of that group and then apply these observed behaviors/characteristics to that entire group (Koeing & Eagly, 2014). Additionally, individuals may make assumptions about groups in order to make sense of the disparities in role distributions. For example, Eagly and Wood (1982) found that when participants believed women to be in lower status positions than men, women were then described as being more compliant. Perceiving women as being more compliant could potentially be a rationalization as to why women do not hold higher status positions, due to greater compliancy instead of assertiveness. Common gender stereotypes include that boys are

agentic (e.g., competent, aggressive, independent) whereas girls are communal (e.g., emotional, compassionate, friendly). Eagly (1987) and Social Role Theory acknowledge that a great deal of current gender stereotypes are the result of historical labor divisions between men and women. Women often had caregiver responsibilities at home, whereas men had the responsibility to work outside of the home and provide for the family. This labor division disparity gradually led to diverging expectancies for men and women, which are in turn imparted on subsequent generations. The glaring problem with having divergent sets of expectancies for men and women is that, as a society, we influence individuals of each gender to acquire a different skill set and to value disparate traits. In turn, we are more likely to appraise men and women differently, within the same context.

These blanketed stereotypes can begin to change with more frequent encounters with women in counter-stereotypic roles (Eagly & Steffen, 1984). This idea is exemplified by the work of Dasgupta and Asgari (2004). In their first study, they found that when women participants were shown pictures and short biographies of famous female leaders throughout history, they then displayed counter-stereotypic automatic gender beliefs. Furthermore, the more likely that participants rated the famous women's success as something they feel would be possible for themselves to attain, the greater effect of counter-stereotypic gender beliefs. This finding illustrated that bringing to mind counter-stereotypic exemplars of female leaders had a robust effect on gender attitudes. Next, in order to examine whether exposure to counter-stereotypic female leaders would have the same effect in the real world, Dasgupta and Asagari examined the differences in automatic gender attitudes of participants at an all-women's college and those attending a co-educational college. They felt as though these different colleges provide unique environmental contexts, as all-women's colleges tend to have a higher rate of women in

leadership positions compared to co-ed colleges. Gender attitudes were assessed by means of an explicit self-report measure and an Implicit Association Test (IAT) with leader and supporter traits words. Dasgupta and Asagari (2004) found that upon entering college, gender beliefs were about the same for participants despite the college environment differences. However, by the second year of college, students at the all-women's college exhibited significantly less automatic gender stereotypes compared to the co-ed college participants. Upon closer examination, Dasgupta and Asagari (2004) found that the amount of exposure to female faculty moderated this relationship, such that at both colleges more contact with female professors was associated with less gender stereotypic attitudes. This work identified a significant change in gender beliefs from the start of college to a year later due to contact with female leaders, thus exemplifying that changing stereotypes is possible with exposure to counter-stereotypic exemplars.

Gender bias issues.

These differences in gender stereotypes and expectancies can become especially detrimental and hindering in the professional and academic world. More often than not, higher status is misattributed to unknown men versus unknown women, and attitudes towards women in leadership positions tend to be unfavorable (Banaji & Greenwald, 1995; Eagly, Makhijani, & Klonsky, 1992; Glick & Fiske, 1996). In a cross-cultural study, Sczesny, Bosak, Neff, and Schyns (2004) found that when asked a general leadership question, participants from Germany, India, and Australia nearly all still imagined mainly male executives. In positions of higher status, males tend to be rated as more intelligent/competent than comparable female colleagues (Bernard, Keefauver, Elsworth, & Naylor, 1981). Furthermore, women are less likely than men to be promoted, which is often associated with supervisors tending to view women as having more family responsibilities interfering with work versus men (Hoobler, Wayne, & Lemmon,

2009). For those women who do manage to make it to higher-status positions, they often experience great backlash due to the prescriptive nature of gender roles and violation of that stereotype (Fiske & Stevens, 1993; Heilman, Wallen, Fuchs, & Tamkins, 2004). Women who act in counter-stereotypic ways, such as possessing more agentic traits tend to be less liked, regarded as cold, and may even be socially isolated (McLaughlin, Uggan, & Blackstone, 2012; Rudman, 1998; Wiley & Eskilson, 1985). Sadly, women in supervisor positions tend to more likely be the victim of sexual harassment, although this could partially be stemming from their heightened social isolation. McLaughlin et al. (2012) speculate that it may be due to men trying to compensate and reassert their typical social power over a woman in a higher-power position, culminating in sexual harassment. Although both men and women demonstrate biases against women in counter-stereotypic gender roles, men are more likely than women to objectify other women in the work setting (Heilman et al., 2004; Johnson & Gurung, 2011; Strelan & Hargreaves, 2005). In general, those individuals who are resistant to women being in power tend to further support other double sexual standards (e.g., idea that men should be sexually free but women should be sexually restrictive (Rudman, Fetterolf, & Sanchez, 2013). Despite the gamut of issues associated with gender biases and the outcomes of being in a counter-stereotypic role, Czopp and Monteith (2003) found that when individuals were confronted with allegations of gender bias they found it to be amusing as compared to experiencing guilt if confronted with racial bias allegations. This finding certainly highlights just how prescriptive gender roles can be, to the point that most do not see anything wrong with the gender biases.

Interaction of Racial and Gender Stereotypes

Although Social Role Theory was not originally intended to apply to race, when investigating the nature of gender and racial biases it seems as though the two are closely related

and analogous in fit. Similar to observing disparities of gender roles, one can easily look out into society and see disparities between races and their common roles. As racial stereotypes are formed they are then applied to individuals who likely fit within that group. These judgments might be based on whether the individual shares the same culture as the group, speaks the same language, or whether they resemble the physical attributes of that group. For example, you may see someone who has narrow/slanted eyes and because of this you categorize them as being Asian. There is a commonly held stereotype that Asians are intelligent, and because you have sorted this individual into the Asian category, you are likely to automatically esteem them to be someone who is smart and studious.

Racial roles additionally appear to interact with and culturally influence gender roles. For example, within the Hispanic family, there is a patriarchal authority and “machismo;” machismo is often associated with the idea of men being a strong protector and provider for the family (Galanti, 2003). However, on the negative side, machismo can also be associated with alcoholism and violence. The Hispanic culture is viewed as being more collectivistic and family centered (Dixon, Graber, & Brooks-Gunn, 2008). Hispanic women are expected to be good mothers and wives, often stereotyped as being submissive to their husbands (Comas-Diaz, 1988; Galanti, 2003). In their study with over 250 students from ethnically diverse backgrounds, Niemann, Jennings, Rozelle, Baxter, and Sullivan (1994) found that Mexican males were more often ascribed the characteristics of non-college educated and ambitionless, whereas Mexican females were characterized as “baby makers,” overweight, and lower class. Although the term baby maker may be slightly offensive, according to the Kaiser Permanente National Diversity Council, fertility rates in the United States are among the highest for Hispanics and furthermore, Hispanics tend to begin childbearing at an earlier age and stop at a later age than other ethnicities

(as cited in Galanti, 2003). Taking this statistic into account coupled with the common “baby maker” stereotype, it gives support to Eagly’s Social Role Theory that observation of the differences in motherhood across races has led to this stereotype formation.

Gender role rigidity is a stereotype often associated with Hispanic culture (Vazquez-Nuttall, Romero-Garcia, & Leon, 1987; Zayas, Lester, Cabassa, & Fortuna, 2005). According to Senour, Hispanic girls are taught to be gentle and docile whereas boys are raised to be more agentic (as cited in Comas-Diaz, 1988). These family-centered and gender-consistent role views tend to persist within the culture for many generations (Comas-Diaz, 1988). Echoing the issues of having divergent sets of expectancies for men and women in society, having divergent expectancies for variant ethnicities leads to related problems.

Racial bias issues.

A majority of racial bias research has looked at the comparisons of Blacks and Whites and found that more often than not, White participants are much more likely to reveal a racial bias in favor of Whites and an implicit association between Blacks and unfavorable attributes or circumstances (Barden et al., 2004; Dasgupta, McGhee, Greenwald, & Banaji, 2000; Fazio et al., 1995). Weyant (2005) found similar results of pro-White attitudes; in his study of implicit biases, participants’ results showed a biased belief that Whites are smarter than Hispanics. This was further correlated with an explicit measure of potential relationships with Hispanic individuals, which again, revealed a racial bias in opposition to Hispanics.

In regards to the work setting, members of racial groups are often categorized by their stereotypic roles. In their preliminary study, Koenig and Eagly (2014) found Hispanics to be most often labeled as lawn maintenance workers, landscapers, fast food workers, or in the cleaning service. Although it is potentially harmful for society to view Hispanics in such a lower

status fashion, one might argue that a more critical issue is that Hispanics may come to view themselves in the same low-status fashion as well.

Despite the common social psychology belief that individuals tend to have a self-favoring nature (i.e., implicitly liking things that are related to themselves), System Justification Theory (Jost, Burgess, & Mosso, 2001) argues that minorities are often subject to the tendency to devalue one's own in-group to remain aligned and consistent with society's beliefs (Bodenhausen & Richeson, 2010). Essentially, despite it being self-harmful, minorities may begin to implicitly endorse out-group favoritism and a bias against their own group. Rudman, Feinberg, and Fairchild (2002) examined groups of variant social standing (e.g., religion, ethnicity, weight, and socioeconomic class) and found minorities with the least amount of status are the ones most likely to display in-group devaluation. Furthermore, minorities may implicitly adopt these disparaging stereotypical beliefs about their in-group even if it conflicts with their explicit beliefs (Jost et al., 2001). This in-group devaluation is a phenomenon certainly seen in gender related issues, as aforementioned women also tend to rate men as being more competent than women (Bernard et al., 1981). This effect can also be seen in regards to ethnic groups. In their survey of 9th and 11th grade students, Lauver and Jones (1991) found that despite Hispanics expressing high levels of aspiration by viewing a wide range of career options as being potentially attainable for themselves, they simultaneously rated they did not believe they would be capable or qualified enough for those positions. According to the System Justification Theory perspective of in-group devaluation, these students may have rated themselves as being lacking in capability in order to stay consistent with what is profusely expressed in society (i.e., the belief that Hispanics are not as smart as Whites; Jost et al., 2001; Weyant, 2005). In relation to Social Role Theory, it could be argued perhaps that these minority groups had difficulty

seeing themselves in those careers because within their community they do not see members of their race in those positions; thus, there is a racial disparity creating or further solidifying racial-career stereotypes.

Despite Hispanics expressing high levels of aspiration, there is still the likelihood they will fall victim to stereotype threat (Gonzales, Blanton, & Williams, 2002; Lauver & Jones, 1991). Stereotype threat occurs when an individual is aware of the stereotypes about their group and becomes fearful they will confirm this stereotype; amidst their apprehensions they inadvertently do end up confirming the said stereotype (Bodenhausen & Richeson, 2010). In their study of gender and racial stereotype threats, Gonzales et al. (2002) had participants complete a math test with some conditions being told beforehand that the test was measuring their true abilities. Both the male and female Latino/a participants indicated similar levels of task competence as compared to White participants based on their prior Scholastic Aptitude Test (SAT) scores. However, the Latino/a participants that were told the test was measuring their true ability still fell victim to stereotype threat, as indicated by their lower amount of correct answers on the administered math test. This indicates just how pervasive the problems associated with stereotypes can be, as even those who explicitly overcome the belief that Hispanics have lesser competence/intelligence can be severely hindered and affected by the underlying implicit thoughts.

Measuring Social Biases

As aforementioned, the activation of stereotypes is an automatic process, whereas prejudice is more of a deliberate cognition, as such implicit and explicit measures of bias may produce similar or different results. Due to impression management motives, some individuals might not be willing to explicitly admit their conscious biases in an attempt to stay in a favorable

light with others (Devine, 1989; Fazio et al., 1995; Greenwald & Banaji, 1995; Rudman & Kilianski, 2000). Along the lines of System Justification Theory's in-group devaluation, minority members might implicitly devalue their in-group in order to remain consistent and aligned with popular society beliefs (Jost et. al, 2001). Additionally, according to the Aversive Racism Theory, even if one outwardly expresses genuine egalitarian beliefs, they could still simultaneously hold implicit social biases (Bodenhausen & Richeson, 2010). Rudman and Kilianski's (2000) study supports this notion as they found female participants did not explicitly have a large bias against women in authority, but implicit measures revealed they held a much more disparaging bias, nearly equal to that of men's bias, against female authority.

Taking the possibility of participants' impression management and Aversive Racism into account, implicit bias measurements will be utilized throughout this study in an attempt to get a more accurate representation of the social biases that one may hold without the influence that would be associated with self-report measures (Nisbett & Wilson, 1977). Specifically, the widely known Implicit Association Test (IAT) developed by Greenwald, McGhee, and Schwartz (1998) will be used to assess social biases. The IAT measures differential levels of association between two categories and two attributes by having participants categorize target stimuli as quickly and accurately as possible (Greenwald et al., 1998). Consistent with associative network models of memory, the premise behind the IAT is that the more closely a target stimuli and attribute are associated in the mind, the more quickly one should be able to categorize them using the same keys. Likewise, if there is a weak or incongruent relationship between the two, then the longer it will take to categorize them using the same keys (Anderson & Bower, 1972; Greenwald et al., 1998). The IAT has been used in several studies of implicit social biases and has been verified as measuring those automatic evaluations (Dasgupta et al., 2000; Ottaway, Hayden, & Oakes, 2001;

Richeson & Ambady, 2001; Richeson & Ambady, 2003). Despite some criticism that the IAT may actually be measuring familiarity with stimuli or a culturally shared knowledge of stereotypes, studies have exemplified that it indeed is a measurement tool of individual attitudes (Banse, Seise, & Zerbis, 2001; Gawronski, 2002). However, Rezaei (2011) did find an interesting effect in regards to familiarity, such that individuals being more familiar with tests similar to the IAT seemed to improve the reliability of the IAT outcomes. Likewise, first-time IAT users had lower reliability of their outcomes.

Competence

It is common in social bias studies to examine participants' perceptions of a group member's competence. According to the Stereotype Content Model, "competence" is a descriptive attribute and often diametrically opposed to the attribute "warmth" (Fiske, Cuddy, Glick, & Xu, 2002). That is to say, if a target social group is perceived to be high in competence, they also tend to be viewed as being low in warmth; likewise, if they are viewed as low in competence they tend to be seen as high in warmth (Judd, James-Hawkins, Yzerbyt, & Kashima, 2005). This is supported by evidence that gender stereotypes tend to describe women as being very warm and friendly and the common occurrences of men being rated as more competent than comparable females (Deaux & Taynor, 1973). The situational role also appears to influence perceptions of competence, as evidenced by Johnson and Gurung's (2011) study in which women who were dressed more provocatively were rated as having higher competence simply because they were depicted in an academic setting versus a plain or athletic related setting. As previously discussed, race and social status roles also exert an influence on perception of competence, with higher status positions leading to an increase in competence ratings (Brambilla, Sacchi, Castellini, & Riva, 2010; Richeson & Ambady, 2001; Weyant, 2005). In

particular, Jones (1991) found that when participants were told that a Hispanic was in a higher status position (i.e., restaurant manager) instead of a lower status (i.e., restaurant worker), they tended to rate the individual as having higher work ethic which included intelligence and competence. In regards to competence and gender, Richeson & Ambady (2001) found men and women were both more likely to associate competence with their respective gender (i.e., men believed men were more competent, whereas women believed women were more competent). From these various findings, it is evident there is still much to learn about the perception of competence as it pertains to gender and racial roles.

Influencing Implicit Social Biases

According to the Dissociation Model (a dual-processing model of stereotyping, beliefs, and behaviors) stereotypes are automatically activated, however, with deliberate effort, one is able to disregard/ignore those automatic cognitions (Devine, 1989). However, in order to engage in this deliberate process, individuals need to be motivated and they need to have the time and capability to do so, if not, they resort to using stereotypes as a way to quickly make sense of the world (Bodenhausen & Richeson, 2010). Sinclair and Kunda (1999) examined the effects of motivation on stereotype activation by having a Black doctor praise or insult participants. The idea behind this was that being complemented by someone would motivate an individual to reciprocate that kindness. Sinclair and Kunda (1999) found high-prejudice participants who were praised by a Black doctor were able to disregard the disparaging Black stereotype and instead increase activation of the flattering doctor stereotype. On the other hand, high-prejudice participants who were insulted by a Black doctor increased the Black stereotype and disregarded the doctor stereotype (Sinclair & Kunda, 1999). These findings demonstrate that with the power of motivation, one has the capability to disregard stereotypes. Furthermore, studies like

Gollwitzer and Schaal (1998) and Kawakami, Dovidio, Moll, Hermsen, and Russin (2000) demonstrate that with training and effortful practice, automatic bias can be reduced.

Lowery, Hardin, and Sinclair (2001) argue some individuals go through a process of social tuning their automatic biases in situations when they will be interacting with a member of a biased against group. This effect was shown in their study where implicit pro-White bias was able to significantly reverse (i.e., change to a pro-Black bias) if participants were interacting with a Black individual (i.e., a member of a biased against group) (Lowery et al., 2001). Lowery and colleagues further add that the more important the relationship with the out-group member is, then the greater the social tuning efforts will occur. For example, if this out-group member is someone you will need to interact with on a daily basis, such as a coworker, then greater social tuning efforts will be made versus the amount of effort one might put in when they interact with someone waiting in line at the grocery store that they will likely not see again. Some would argue this result is actually the case of sub-typing the individual they interacted with as an exception to the group to which they belong (Brewer, Dull, & Lui, 1981; Richards & Hewstone, 2001). Sub-typing may occur when an individual encounters someone who is counter-stereotypic to their normal group membership; the individual can either make adjustments to the stereotype of that group to include this new information or they can categorize this counter-stereotypic exemplar as being a subtype of that group (Richards & Hewstone, 2001).

Following Social Role Theory, changes in stereotype can occur from greater equality in role distributions, encountering counter-stereotypic exemplars, social roles acquiring different role demands, or by the interaction of individual social roles (Brewer, 1988; Koenig & Eagly, 2014). Blair, Ma, and Lenton (2001) found the act of simply imagining a counter-stereotypic exemplar (i.e., an agentic woman) served to reduce implicit gender stereotyping. Changes in the

environment and social context also tend to affect social biases. Some studies have found that by having students in environments where they experience counter-stereotypic exemplars (e.g., female leaders, Black professors) they tend to have a decrease in social biases (Dasgupta & Asgari, 2004; Dasgupta & Greenwald, 2001; Rudman, Ashmore, & Gary, 2001). Furthermore, the greater amount of time spent in environments that one may encounter counter-stereotypic exemplars, the further reduction in implicit bias is seen (Dasgupta & Asgari, 2004).

Related to, and inspired by, Social Role Theory is Barden et al.'s (2004) Differential Role Evaluation Hypothesis which proposes roles within different contexts are evaluated differently depending on what race the individual within that role is. Thus, there is an interaction between social and racial cues that occurs which may result in a favorable, unfavorable, or an egalitarian evaluation of that individual. For example, in their study Barden et al. (2004) found that when pictures of Blacks and White were both depicted in a jail setting but described to be lawyers, there was a significant reversal in bias, now in favor of Blacks. When pictures of Blacks and Whites were depicted in a prison setting, church setting, and factory setting with no direct reference to their social role, biases were observed as follows: Prison, in favor of Whites; church, egalitarian; factory, in favor of Blacks (Barden et al., 2004). These findings support their Differential Role Evaluation Hypothesis that individuals in the same social context will be evaluated differently, dependent on the interaction of that context with their race based roles.

Despite the variety of ways discussed above that social bias can be influenced, there is still the possibility that no changes will occur due to the inherently resistant nature of stereotypes. Johnston and Macrae (1994) found that when given the ability to control the nature and amount of information received about a target group, participants tended to have a preference for receiving information that matched their stereotypes, and as such no changes in

stereotypes about that group were made. This sheds light on the fact that, as humans, we tend to rely on quick and easy ways to categorize information versus more detailed and incongruent ways.

OBJECTIVES AND HYPOTHESES

For the present experiments, the effects of social role and environment on automatic ethnic and gender biases were examined, with the aim of trying to influence these biases. Specifically, it was investigated whether interacting with marginalized individuals depicted in a superior social status position (i.e., PhD student) will reduce social bias in terms of perceived competence, and further, whether the time spent at a Hispanic serving university will also serve to reduce bias. To manipulate social status standing, confederates posed as the experimenters for the study and said they were either a PhD student (i.e., superior) or an undergraduate (i.e., peer). Similar to Lowery et al. (2001) and Richeson and Ambady (2003), participants were exposed to the confederate experimenter and then their implicit social biases were measured via the Implicit Association Test (IAT). Although an explicit measure of ethnic and gender biases would add to the understanding of the malleability of social biases, the experimenters did not feel as though an explicit measure would properly fit within the experiments without having a confounding influence on the implicit results or by being affected itself by the nature of the experiment, skewing its results. Future studies could perhaps look at explicit measures of bias solely, instead of the present implicit. Given the convenience of the sample at this university (i.e., Texas A&M University – Corpus Christi), female Hispanic students were used as participants. Being that Hispanic females are a member of a minority, it is not likely they would inherently exhibit self-favoring tendencies; therefore, we expected that we would still be able to influence and reduce their disadvantageous social biases (Cuddy et al., 2009; Jost et al., 2001; Rudman et al., 2002).

The results from the two experiments will provide information about the implicit attitudes Hispanic women endorse about their individual social roles (i.e., Hispanic and female). Then taken together, these experiments may begin to shed insight on the possible outcomes of the intersection of being female and Hispanic. Throughout the remainder of the paper the confederates who posed as the experimenter will simply be referred to as “experimenter.”

For the first experiment, gender biases between women and men were examined through use of the IAT. Based off the results of Lowery et al. (2001) and Richeson and Ambady (2003), it was hypothesized that there would be a main effect of gender such that participants who interact with a female experimenter compared to the male experimenter would respond much faster to counter-stereotypic pairings, revealing less of an implicit pro-male bias. These results would be seen as participants having a much smaller mean latency difference between confederate conditions. It was further hypothesized that there would be an interaction between gender and social status which will magnify the differences in implicit bias scores between confederate conditions. Therefore a smaller difference in participants’ response latencies should be seen if the experimenter they interact with is a superior status female versus a peer status female. Based on Dasgupta and Asgari’s (2004) work, it was hypothesized that there would be a main effect of cohort, such that if a student has been at the university for two years or more, they should endorse weaker pro-male gender biases compared to incoming university students. Additionally, it was hypothesized that there would be an interaction between gender and cohort shown by a magnification of the difference in implicit bias scores between the cohort groups, as a result of greater time at the university. In regards to the incoming student cohort, the difference between biases for those participants run with a male experimenter compared to a female experimenter should be smaller. However, this difference should be more pronounced for those

participants who have been at the university for two or more years. The final hypothesis is that there will be a three-way interaction between student cohort, experimenter gender, and experimenter social status. Specifically, those participants who have been at the university for two years or more and interact with the superior female experimenter should reveal the weakest pro-male implicit gender bias. It is also possible that the expected results will not be seen; if participants turn to sub-typing the experimenter or in-group devaluation we should see a stronger pro-male implicit bias with faster responding to stereotypic pairings.

The second experiment will be fairly similar to the first, with the only change being White and Hispanic ethnic biases will now be measured via the IAT, with use of a White and Hispanic experimenter. The manipulations of social status and examination of length of time at the university will remain the same. The hypotheses for the second experiment are nearly identical to the first except this time they are in regards to ethnicity. It is hypothesized there will be a main effect of ethnicity, such that participants who interact with a Hispanic experimenter compared to a White experimenter will respond faster to counter-stereotypic pairings, therefore, revealing less of a pro-White implicit bias. Therefore, it is expected that participants will show a much smaller mean latency difference between exposures to experimenters. It is also hypothesized that there will be an interaction between experimenter ethnicity and social status, with exposure to a superior social status experimenter magnifying the differences in implicit bias scores between White and Hispanic experimenters. Therefore, a smaller difference in participants' response latencies should be seen if the experimenter they interact with is a superior status Hispanic versus a peer status Hispanic. It is additionally hypothesized that there will be a main effect of cohort, with students who have been at the university for two years or more having a weaker pro-White bias compared to incoming freshmen students. An interaction

between experimenter ethnicity and cohort is hypothesized, which would be seen as an increase of difference in implicit bias scores as a result of greater time at the university. The final hypothesis is that there will be a three-way interaction between student cohort, experimenter ethnicity, and experimenter social status. Specifically, those participants who have been at the university for two years or more and interact with the superior Hispanic experimenter should reveal the weakest pro-White implicit ethnic bias. In the event that participants subtype the Hispanic experimenter or turn to in-group devaluation, then it is expected to see faster stereotypic pairings responses, indicating a stronger pro-White implicit bias.

EXPERIMENT 1

To examine the hypothesis that implicit gender bias is subject to influence from interactions with counter-stereotypic exemplars, female Hispanic participants completed the IAT in the presence of either a peer or superior, female or male experimenter. If the IAT accurately reproduces the findings of Lowery et al. (2001) and Richeson and Ambady (2003), participants that interact with the female experimenter should demonstrate a smaller difference in response latencies to stereotype consistent and stereotype inconsistent pairings, indicating a weaker pro-male implicit gender bias. Furthermore, the magnitude of the difference resulting from interactions with the female experimenter compared to the male experimenter will be reduced as the relative social standing reverses. Therefore, those participants who interact with a female experimenter in higher social status should reveal a weaker pro-male gender bias than those participants who interact with a female experimenter in a peer social status. Additionally, based on the results of Dasgupta and Asgari (2004), it is expected those participants who have been at the University for two years or more will have a weaker pro-male bias compared to incoming

freshmen. Finally, the three-way interaction between experimenter gender and student duration on gender bias will depend on the experimenter's portrayed social status.

Method

Participants

Students over the age of 18 from Texas A&M University - Corpus Christi (TAMUCC) were recruited for participation in this experiment. As the experiment focused on the influence of gender bias endorsed by women, it was imperative to control the gender makeup of the sample by recruiting only participants who identify as female. Additionally, in order to systematically control for the influence ethnicity may have, only Hispanic participants were recruited from psychology courses. Doodle, an online scheduling poll, was utilized to manage participant sign-ups. As participants signed up for times, they were randomly assigned to either the peer or superior social status condition.

Upon completion of data collection, participants were sorted into one of two cohorts, based on their specified amount of time as a student at this university. Participants that indicated a duration of two years or more were sorted into the long-term cohort, whereas those with less time were classified as incoming students. The specified difference in a student's length of time at the university was necessary to examine whether length of exposure to counter-stereotypic exemplars has a relationship with gender and ethnic biases. The total number of initial participants was 96, with an average age of 20.04.

Design

The design of the experiment was a 2 (experimenter gender: female vs. male) X 2 (social status: peer vs. superior) X 2 (student cohort: incoming vs. long-term) between subjects design, with participants being randomly assigned to the female-peer, female-superior, male-peer, or

male-superior condition. All participants completed the same five phases of the IAT. The dependent variable was the differential gender attitudes, as measured by the IAT.

Materials

Because there was not a way to communicate with participants via Doodle, a fake email account (i.e., j.sociology2@gmail.com) was created to message participants. Upon agreeing to take part in the experiment, participants received a follow up recruitment message from this email. The purpose of this follow up message was to introduce the manipulation of their expected social status relationship with the experimenter (the confederate). Half of the participants were randomly assigned to receive a message from a “peer” and the other half received a message from a “superior.” The peer recruitment message was as follows:

“Thank you for recently signing up to participate in the ‘Social Biases’ experiment. I am an *undergraduate student* here at *TAMUCC* and this study is part of my *McNair research project*. The purpose of this study is to investigate the influence of a Hispanic culture on memory concepts and the strength of their associations. As a Hispanic Serving Institute, TAMUCC is an ideal location to collect data for this study... Your assistance and willingness to participate in my *McNair undergrad project* is greatly appreciated.”

The superior recruitment was nearly identical with the only differences being that the experimenter identified themselves as a *doctoral student* from *Texas A&M - College Station* working on their *dissertation*.

The participants were exposed to one of the genders when they reported to the experiment and were met by the experimenter. Two Hispanic confederate-experimenters were used, one male and one female. The use of a same ethnicity confederate to the participants was

intended to isolate the effects of gender alone, without the possible influence of ethnicity. Both experimenters were of similar age. For each session of the experiment, experimenters wore a shirt that matched with their portrayed program (i.e., McNair undergraduate or A&M doctoral) to emphasize this manipulation. Additionally, a script was developed for the experimenters to follow during their interactions with the participants to reduce variability between experimenters. As part of this script, experimenters would mention their respective school (i.e., TAMUCC or TAMU), student classification (i.e., undergraduate or doctoral), and their type of project (i.e., McNair undergraduate project or doctoral dissertation) to once again reiterate their portrayed social status. Upon completion of the IAT, participants answered manipulation check questions that asked the ethnicity, gender, and program of their respective “experimenter.”

The Implicit Association Test (IAT), developed by Greenwald et al. (1998), was used to assess the degree to which participants favored males over females, with use of *male names* and *female names* as the targets and *competent* and *incompetent* words as the attributes. The choice to use names as the targets as opposed to pictures of faces was due to the greater amount of control, and easier ability to systematically control for differences in names rather than faces. The target names were chosen by searching *babyname.ch*, a baby name site that has lists of the most popular baby names sorted by year and region. The male and female names used were both Hispanic based. The names chosen were all from the year 1999, as it was expected that this would be around the time that most participants would have been born. Names were selected with the expectation that participants would have grown up frequently encountering individuals with these names, therefore making it easier to sort the names into their respective categories. The list of names ranged from the most popular of the year at #1, to the 100th most popular name. The chosen names were matched by their average rank of frequency. For example, the selected

male names averaged out to a frequency of 36.92, therefore the female names were chosen so that their average frequency came out to a close 37. Male and female names that were similar in spelling (e.g., Paul and Paula) and names that could be unisex (e.g., Guadalupe) were not selected to avoid any ambiguous classifications for participants. The competent and incompetent stimuli were the same words as those used in the Richeson and Ambady (2001) study of the implicit gender attitudes which arise from various social status roles. For the full list of stimuli, see Appendix A. Participants completed the five phases of the IAT on computers in the experiment room.

Procedure

On the day of the experiment, participants were greeted by the experimenter who followed the scripted interaction which reiterated their social status. The script also covered a brief explanation of the study. Participants were told that the purpose of the experiment was to investigate the influence attending a minority serving university might have on their automatic social attitudes towards different groups, which will be assessed by completing several word categorization tasks on the computer. Consent forms were then distributed, read, and signed. It was from this brief interaction with the experimenter that participants were exposed to the gender variable. After collecting informed consent, the experimenter brought the participants into the next room, which was equipped with several computers. Up to six participants could complete the experiment within a single session.

As each participant indicated they were ready to begin, the experimenter started the IAT program and left the room. The IAT task consisted of five different phases presented on the computer screen in which participants had to categorize visually presented words by pressing the “Z” key on the left and the “/” key on the right. In all phases, participants were presented with

stimulus names or words and were asked to categorize them as quickly as possible using the appropriate keys on the keyboard, while still maintaining accuracy. During the experiment, a stimulus word appeared instantly on the screen and remained there until the participant pressed a computer key. If a participant pressed the incorrect key or a key that is not a designated choice, an “ERROR” message appeared on the screen. If the participant pressed the correct key then the next stimulus word appeared. At the end of each phase, participants were presented with their accuracy and mean response time, in an attempt to maintain motivation.

Phase 1 and 2 of the IAT were category learning phases, where participants were asked to sort stimuli names into either male or female categories, then to sort attribute words into either competent or incompetent categories. For example, if they were asked to categorize names (e.g., Sonia, Santiago) they might be asked to press the letter “Z” to categorize a name as belonging to the “male” category (depending on how the keys were counterbalanced), or hit the letter “/” if it belongs to the female category. Likewise, if asked to categorize words (e.g., qualified, unqualified), the letter “Z” might indicate the word belongs to the Competent category while the letter “/” indicates it belongs to the Incompetent category. The category associated with each key response appeared in the bottom corners of the screen at all times to remind participants what they represent.

Phase 3 was the first critical phase, where the racial and competence categories were now combined, and participants were required to sort the stimuli names and stimuli words with one response key (e.g., the same key for male names and competent words). All stimuli names and competent/incompetent words were presented. In Phase 4, the designated keys for one the categories was reversed and participants were required to categorize following this new pattern. For instance, “Z” would now be used to categorize female names and “/” would be used to

categorize male names. In order to prevent practice effects, the response keys associated with male names and female names were counterbalanced across participants so that approximately half were initially asked to categorize female names with competent words and the other half began by categorizing male names with competent words. In the 5th and final critical phase, the stimuli from the two categories (gender and competence) were again combined and participants were required to sort them by utilizing the switched response keys (e.g., now female names and competent words). Phases 3 and 5 were the critical dual-categorization phases where the degree of association between the categories was assessed by their speed of their categorization. Once all participants in the session completed the study, they were thanked for their time and debriefed. During the debriefing, the experimenters asked the participants what they thought the true purpose of the experiment was and recorded if there were any close speculations.

Results

As part of a manipulation check, an independent samples t-test analysis revealed that there was a significant difference between the ability of the participants to accurately identify the gender of their respective experimenter, $t(94) = -3.29, p = .001$, such that all participants who interacted with the female experimenter were able to correctly identify her gender, whereas only 81% of the participants who interacted with the male experimenter could correctly recall his gender. Due to the influence of gender being a variable of interest in this experiment, nine participants were removed from data analysis due to their incorrect experimenter gender identification. There was not a significant difference in the ability of participants to correctly identify their respective experimenter's ethnicity as being Hispanic or Latino/a, $t(94) = 0.39, p = .70$; however, six participants were removed for misidentification of their experimenter's ethnicity. Due to errors with the experiment program, information for the social status

manipulation check was not saved and therefore could not be included in analysis. The information assessing the perceived demeanor and professionalism of the experimenters by the participants was also not saved.

Accuracy for each participant was measured as the correct number of responses from the 3rd and 5th critical phases, the female/competent ($M = 38.46$ out of 40 items, $SD = 2.50$) and male/competent pairing ($M = 36.68$, $SD = 4.10$). Participants who particularly struggled with this task and had accuracy that fell more than two standard deviations below the mean for either of the female/competent ($M < 34$) or male/competent pairings ($M < 28$) were excluded from further analysis. After removing participants for low accuracy as well as for incorrect experiment gender and ethnicity identification, a total of 74 participants remained. Participants' ages ranged from 18 to 39 ($M = 20.26$, $SD = 3.24$).

There was not a significant difference in reaction time for the female/competent, $F(3, 73) = 2.13$, $p = .10$, or male/competent pairings, $F(3, 73) = 0.88$, $p = .46$, across the four counterbalanced versions (E, F, G, H) of the IAT. Additionally, there was not a significant difference in accuracy for female/competency pairings across the counterbalanced IAT versions, $F(3, 73) = 1.40$, $p = .25$, although a significant difference did emerge for male/competency accuracy, $F(3, 73) = 4.08$, $p = .01$. Post-hoc analysis with Bonferroni correction revealed a significant difference in accuracy between versions E ($M = 38.75$ out of 40, $SD = 1.29$) and G ($M = 36.57$, $SD = 2.29$) of the IAT ($p = .01$). For both the E and G versions, the male/competent pairing shared the right-hand key “/”, however, version G first had participants use this key for the male/incompetent pairing.

To provide a single dependent measure for each participant, the mean response latency for all items in the critical phases was calculated. Implicit bias scores were then calculated for

each participant by subtracting the mean response time of the stereotypic categorization pairings (i.e., male names with competence) from the mean response time for the counter-stereotypic categorization pairings. If participants hold a non-conscious bias in favor of males, they should respond faster in the phases which male names share a response key with competent words versus when female names and competence share a key. A higher positive difference in mean latencies represents a closer association between male names and competent words, indicating a greater bias in favor of males, whereas a smaller difference in mean latencies reflects non-conscious egalitarian attitudes of gender and competence. A negative difference in mean latencies indicates a reversal in gender bias (i.e., pro-female bias). This single measure of bias served as the dependent measure in a 2 experimenter gender (male vs. female) X 2 social status (peer vs. superior) X 2 student cohort (incoming vs. long-term) factorial ANOVA.

Contrary to the hypothesis, there was not a significant effect of gender on the implicit bias scores, $F(1, 66) = 0.04, p = .85$. Participants who interacted with the male experimenter ($M = -254.95, SD = 381.35, n = 33$) and those who interacted with the female ($M = -252.77, SD = 351.05, n = 41$) endorsed nearly equal pro-female biases (see Figure 1a). The interaction between experimenter gender and status also failed to reach statistical significance, $F(1, 66) = 0.25, p = .62$. However, some of the data appears to be trending in the hypothesized direction such that the participants in the female-superior condition ($M = -339.26, SD = 390.70, n = 20$) endorsed the greatest pro-female implicit bias score, whereas the female-peer ($M = -170.40, SD = 294.71, n = 21$) and male-superior ($M = -222.53, SD = 337.59, n = 19$) participants had weaker pro-female biases (see Figure 1b).

It was hypothesized that long-term students ($M = -200.58, SD = 233.30, n = 22$) would have a greater pro-female bias than incoming students ($M = -276.23, SD = 404.67, n = 52$);

however, the opposite pattern was seen and the main effect failed to reach statistical significance, $F(1, 66) = 0.46, p = .50$ (see Figure 2a). Additionally, the interaction between experimenter gender and cohort type was not significant, $F(1, 66) = 0.21, p = .65$. Incoming student participants that interacted with the male ($M = -312.00, SD = 472.15, n = 20$) and female experimenter ($M = -253.88, SD = 362.53, n = 32$) endorsed stronger pro-female biases than the long-term students that interacted with the female experimenter ($M = -248.84, SD = 326.90, n = 9$; see Figure 2b). The long-term students who interacted with the male experimenter showed more egalitarian attitudes ($M = -167.17, SD = 145.09, n = 13$).

The three way interaction between experimenter gender, status, and student cohort did not reach statistical significance, $F(1, 66) = 0.57, p = .45$. Contrary to what was expected, the long-term students who interacted with the superior-female experimenter ($M = -144.10, SD = 194.91, n = 3$) did not endorse the greatest pro-female implicit bias. Rather, the incoming students in the superior-female condition ($M = -373.70, SD = 410.02, n = 17$) showed the greatest pro-female bias. The remaining conditions, incoming-peer-male ($M = -312.93, SD = 504.40, n = 11$), incoming-superior-male ($M = -310.87, SD = 459.81, n = 9$), longterm-peer-female ($M = -301.21, SD = 381.99, n = 6$), longterm-peer-male ($M = -247.61, SD = 20.05, n = 3$), longterm-superior-male ($M = -143.03, SD = 158.67, n = 10$) had progressively weaker pro-female biases, with the incoming-peer-female condition ($M = -118.07, SD = 248.39, n = 15$) endorsing the most egalitarian bias (see Figure 2c).

Discussion

Contrary to what was expected, participants tended to, on average, exhibit more pro-female or egalitarian attitudes, as opposed to pro-male biases. This outcome is consistent with Richeson and Ambady's (2001) finding that men and women were more likely to associate

competence with their own respective gender. This effect could possibly be a result of participants not devaluing their in-group (i.e., women) as System Justification theory would expect but instead viewing their in-group in a more favorable manner due to the in-group bias nature (i.e., implicitly liking things related to oneself) people tend to have. Average bias scores for participant interactions with the male versus female experimenter were nearly equal. Although there was a considerable number of participants who were unable to correctly recall the male experimenter's gender, these participants were removed from analysis. However, the exhibited recall difficulty by participants suggests that they may have been preoccupied and perhaps did not pay much attention to the experimenter. Alternatively, it is possible that the male experimenter may not have closely fit the participants' prototypical idea of men, thereby hindering the possible influence of interactions with the male experimenter. In regards to the interaction between the experimenter gender and their posed social status, the data is trending in the expected direction. When the female experimenter introduced herself as a doctoral student this precipitated the strongest pro-female bias from participants. This indicates that encountering gender counter-stereotypic exemplars does have some influence on gender biases. Therefore, as Social Role Theory posits, having more frequent exposure to these counter-stereotypic exemplars should begin to alter stereotypes. It is possible that if the participants had a longer interactive experience with the experimenters that the interaction between experimenter gender and social status may become significant. Similarly, having a more meaningful interaction with the experimenter could produce a stronger effect.

When examining the difference in biases between participant cohorts the results were not as expected. Specifically, it was hypothesized that participants who have been at the university for two years or more would endorse the weakest pro-male bias. However, it was the incoming

student cohort that showed the strongest pro-female bias. The effect of the experimenter gender did not yield much of a difference between the cohorts, as the incoming students endorsed stronger pro-female bias than the long-term students for both the male and female experimenter interactions. The three-way interaction between experimenter gender, social status, and student cohort also did not produce the expected results, as it was the incoming students who encountered the female doctoral experimenter that exhibited the strongest pro-female bias. The present university has a student population that is predominantly female as opposed to male, and as such provides an environment with more frequent counter-stereotypic exemplars. Previous research, such as Dasgupta and Asgari (2004) has demonstrated that the experience of longer duration of time in these environments tends to produce individuals with more counter-stereotypic biases. Therefore, it is speculated that the observed results of incoming students endorsing stronger pro-female bias than long-term students is due to the low number of long-term students that participated in the study ($n = 22$). Alternatively, one could speculate that with increased years of college education individuals become better at alternative perspective taking and are not as rigid in their thinking, leading to more egalitarian attitudes as opposed to bias for one's in-group.

Limitations for the first experiment include the fact that the male experimenter's gender was not as salient to the participants and therefore minimized the effect of gender as a variable. Additionally, there was a small turnout of participants for the long-term student cohort which reduced the power of the experiment, making detecting an effect of cohort less likely. On another note, losing the manipulation check information for social status is also a limitation, as there may have been some participants who did not register the experimenter's posed status. For the second

experiment, the program issue of not documenting answers for the social status manipulation check was rectified.

EXPERIMENT 2

Experiment 2 closely followed Experiment 1, with only a few differences. To examine the hypothesis that implicit ethnic bias is subject to influence from interactions with counter-stereotypic exemplars, female Hispanic participants completed the IAT in the presence of either a peer or superior, Hispanic or White experimenter. Similar to Experiment 1, it was predicted that participants who interact with the Hispanic experimenter should demonstrate a smaller difference in response latencies to stereotype consistent and stereotype inconsistent pairings, indicating a weaker pro-White implicit ethnic bias. Furthermore, the magnitude of the difference resulting from interactions with the Hispanic experimenter compared to the White experimenter will be reduced as the relative social standing reverses, such that those participants who interact with a Hispanic experimenter in higher social status will reveal a weaker implicit ethnic bias than those participants who interact with a Hispanic experimenter in a peer social status. Additionally, it was expected that those participants who have been at the university for two years or more will have a weaker implicit ethnic bias compared to incoming student cohort. Finally, a three-way interaction is predicted, such that the interaction between experimenter ethnicity and student duration on ethnic bias will depend on the experimenter's portrayed social status.

Method

Participants

Female Hispanic students for two cohorts were recruited as participants. The use of female Hispanic participants was again intended to systematically control for the influence that gender and ethnicity may have on interactions. For this experiment, the SONA recruitment

system was available for use and this was the means by which participants were recruited and contacted. There was a total of 59 students that initially participated, with an average of 18.

Design

The design of the experiment is a 2 (experimenter ethnicity: Hispanic vs. White) X 2 (social status: peer vs. superior) X 2 (student cohort: incoming freshmen vs. two years or more) between subjects design, with participants randomly assigned to the Hispanic-peer, Hispanic-superior, White-peer, or White-superior condition. All participants completed the same five phases of the IAT. The dependent variable was the differential ethnic attitudes, as measured by the IAT.

Materials

Upon agreeing to take part in the experiment, participants received the same follow-up recruitment message from Experiment 1, this time through SONA. Again, this message served as the manipulation of their expected social relationship with the confederate experimenter. Half of the participants were randomly assigned to receive a message from the “peer” and the other half received a message from the “superior.”

The participants were exposed to one of the two ethnicities at the time of the experiment when they were introduced to the experimenter. Two female confederates were used, one for each ethnicity. The use of a same sex confederate to the participants was intended to isolate the effects of ethnicity alone, without the possible influence of gender. The Hispanic confederate was a woman that could easily be identified as a Hispanic. From Niemann et al.’s (1994) examination of stereotypes characteristics, it was found that dark skin, dark black/brown hair, and dark eyes are often stereotypical of Hispanics, thus the confederate possessed these attributes. There was greater difficulty in finding a White female confederate that could

accurately embody that ethnic stereotype of Whites (i.e., light skin, blonde hair, and light eyes; Niemann et al., 1994). The selected White confederate therefore had light skin, naturally brown but dyed blonde hair, and light brown eyes. Although it would have been ideal to find a White confederate that more closely matched the physical stereotype of Whites there was no other suitable and viable options. Both confederates appeared to be similar in age.

The IAT was again be used to assess the degree to which participants implicitly favored Whites over Hispanics using *Anglo-American names* and *Hispanic-American names* as the targets and *competent* and *incompetent* words as the attributes (Greenwald et al., 1998). The White and Hispanic names were both female names. Therefore, the Hispanic female names used from the first experiment were used as the same Hispanic names for Experiment 2. The White target names were then matched by their rank order of frequency, in the similar way as for the first experiment. Ethnically ambiguous names and names that are similar in spelling (e.g., Julie and Julieta) were not used to avoid any confusion or ambiguous classifications for participants. The competent and incompetent stimuli were the same words as those used in the first experiment. For the full list of stimuli, see Appendix A. Participants completed the five phases of the IAT on computers in the experiment room.

Procedure

On the day of the experiment, procedures followed the same as they did for the first experiment. The IAT set-up also followed as it did in Experiment 1, except in this case participants were categorizing White and Hispanic female names with competence/incompetence. For example, in the learning Phases 1 and 2, a participant could be asked to press key “Z” to indicate if Jenna is a White name or key “/” if it is a Hispanic name. Again, “ERROR” messages appeared on screen if participants pressed the wrong answer key.

For the first critical dual-categorization phase (Phase 3) ethnicity and competence categories were now be combined and participants had to sort the stimuli names and stimuli words with one response key (e.g., the same key for White names and competent words). In Phase 4, the designated keys for one set of the categories was reversed, and participants were required to categorize following this new pattern. In this last critical phase, the two categories (ethnicity and competence) were again combined, and participants needed to sort them utilizing the new, reversed key associations. Phases 3 and 5 were the critical dual-categorization phases where the degree of association between the categories was assessed. Once participants completed the experiment, they were thanked for their time and debriefed. Again, any close speculations about the true purpose of the experiment were recorded. No participants vocalized being suspicious of the true nature of the experiment.

Results

Two participants were removed from data analysis due to identifying as White instead of Hispanic for their ethnicity. As part of a manipulation check, an independent samples t-test analysis revealed that there was a significant difference between the ability of the participants to accurately identify the ethnicity of their respective experimenter, $t(57) = -3.05, p = .000$, such that all participants who interacted with the Hispanic experimenter were able to correctly identify her ethnicity as Hispanic or Latina, whereas only 71% of the participants who interacted with the White experimenter could correctly identify her ethnicity. Due to the influence of ethnicity being a variable of interest in this experiment, 10 participants were excluded due to incorrect experimenter ethnicity identification. Analysis also revealed that there was a significant effect between the ability of participants to correctly identify the program their respective experimenter identified as being a part of, $t(57) = 1.49, p = .01$. Participants were better able to accurately

recall the respective program of the White experimenter (80%) compared to the Hispanic experimenter (63%). Two participants were removed for egregious errors in program identification, such as identifying a peer status (i.e., undergraduate) experimenter as belonging to master's or doctoral program.

Accuracy was measured as the correct number of responses in the Hispanic/competent ($M = 36.66$ out of 40 items, $SD = 2.89$) and White/competent pairing ($M = 36.05$, $SD = 3.42$) in session. Participants who particularly struggled with this task and had accuracy that fell more than two standard deviations below the mean for either of the Hispanic/competent ($M < 31$) or White/competent pairings ($M < 30$) were excluded from further analysis. After removing participants for low accuracy as well as for incorrect experimenter ethnicity and program identification, a total of 41 participants remained. Participants' ages ranged from 18 to 34 ($M = 20.46$, $SD = 2.97$).

There was not a significant difference in reaction time for the Hispanic/competent, $F(3, 37) = 0.53$, $p = .66$, or White/competent pairings, $F(3, 37) = 0.48$, $p = .70$, across the four counterbalanced versions (A, B, C, D) of the IAT. Additionally, there was not a significant difference in accuracy for Hispanic/competent $F(3, 37) = 0.65$, $p = .56$ or White/competent pairings $F(3, 37) = 0.83$, $p = .49$ across the counterbalanced IAT versions.

Similar to Experiment 1, implicit bias scores were calculated for each participant by subtracting their mean response time during the stereotypic White/competent pairing from their mean response time in the counter-stereotypic, Hispanic/competent, pairing. If participants hold a non-conscious bias in favor of White ethnicity, they should respond faster in the phases which White names share a response key with competent words versus when Hispanic names and competence share a key. A higher positive difference in mean latencies represents a closer

association between White names and competent words, indicating a greater bias in favor of Whites, whereas a smaller difference in mean latencies reflects non-conscious egalitarian attitudes of ethnicity and competence. A negative difference in mean latencies indicates a reversal in ethnic bias (i.e., pro-Hispanic bias). This single measure of bias served as the dependent measure in a 2 experimenter ethnicity (White vs. Hispanic) X 2 social status (peer vs. superior) X 2 student cohort (incoming freshmen vs. two years or more) factorial ANOVA.

Contrary to the hypothesis, there was not a significant effect of ethnicity on the implicit bias scores, $F(1, 33) = 3.50, p = .07$. Despite approaching significance, participants who interacted with the White experimenter ($M = -124.53, SD = 289.39, n = 21$) and those who interacted with the Hispanic ($M = -69.29, SD = 282.25, n = 20$) on average, endorsed similar egalitarian attitudes (see Figure 3a). The interaction between experimenter ethnicity and status also failed to reach statistical significance, $F(1, 33) = 0.06, p = .81$. Participants in the superior-White condition ($M = -143.94, SD = 372.26, n = 8$) endorsed the greatest pro-Hispanic implicit bias score. The remaining conditions, peer-White ($M = -112.59, SD = 241.52, n = 13$), superior-Hispanic ($M = -100.22, SD = 237.55, n = 13$), and peer-Hispanic ($M = 13.88, SD = 359.93, n = 7$), produced increasingly egalitarian biases (see Figure 3b).

It was hypothesized that long-term students ($M = 43.76, SD = 285.55, n = 13$) would have a greater pro-Hispanic bias than incoming students ($M = -156.78, SD = 264.95, n = 28$) however, a significant effect in the opposite direction occurred, $F(1, 33) = 7.73, p = .01$ (see Figure 4a). The interaction between experimenter ethnicity and cohort type was not significant, $F(1, 33) = 0.34, p = .56$. Incoming student participants that interacted with the White ($M = -237.29, SD = 305.26, n = 11$) and Hispanic experimenter ($M = -104.68, SD = 229.96, n = 17$) endorsed a non-significantly stronger pro-Hispanic biases. In contrast, the long-term students showed more

egalitarian and pro-White attitudes when interacting with the White ($M = -0.49$, $SD = 223.45$, $n = 10$) and Hispanic experimenter ($M = 191.25$, $SD = 471.29$, $n = 3$), although not significantly so (see Figure 4b).

Given the overall low sample size of this experiment, the numbers within each of the cells of the three-way interaction limited the statistical analysis. Unfortunately, only one student participated in the longterm-superior-Hispanic condition and she did not endorse the greatest pro-Hispanic implicit bias, instead she showed the most egalitarian attitude. The three way interaction between experimenter ethnicity, status, and student cohort did not reach statistical significance, $F(1, 33) = 2.75$, $p = .12$. Surprisingly, the incoming students in the superior-White ($M = -589.63$, $SD = 271.27$, $n = 2$) showed the greatest pro-Hispanic bias (see Figure 4c). The remaining conditions, incoming-peer-White ($M = -159.00$, $SD = 263.34$, $n = 9$), incoming-superior-Hispanic ($M = -107.76$, $SD = 246.48$, $n = 12$), incoming-peer-Hispanic ($M = -97.27$, $SD = 210.63$, $n = 5$), longterm-peer-White ($M = -8.16$, $SD = 165.51$, $n = 4$), and longterm-superior-White condition ($M = 4.62$, $SD = 270.85$, $n = 6$) had progressively egalitarian attitudes. The participants in longterm-peer-Hispanic condition ($M = 291.77$, $SD = 619.35$, $n = 2$) endorsed pro-White biases. Analysis revealed that there was not a significant difference between how participants rated the perceived professionalism, $t(39) = 0.05$ $p = .81$, and demeanor, $t(39) = 0.31$, $p = .48$, of the experimenters.

Discussion

On average, participants exhibited egalitarian attitudes, although leaning slightly more towards pro-Hispanic biases. Rudman, Feinberg, and Fairchild (2002) demonstrated that the devaluation of one's in-group is more likely to occur as minority social status becomes lesser and lesser. Although Hispanics do have a lower status in society, one could easily argue that there are

other minority groups (e.g., African-Americans, Middle Eastern Americans) currently facing greater oppression, thus placing them in a lower status. Therefore, it is possible that the participants endorsed more egalitarian attitudes because they do not perceive their minority in-group as having a lower status in our current society.

Although participants for both the White and Hispanic experimenter interactions showed egalitarian like attitudes, participants in the White experimenter condition had bias scores that were leaning more towards pro-Hispanic than those participants in the Hispanic experimenter condition. This result is contrary to what was expected. Despite the fact that there was not a difference in how professional the participants perceived the two experimenters to be, there is a possibility that the White experimenter may have been perceived as being a less competent “experimenter.” Although competence and professionalism tend to go hand-in-hand it does not necessarily mean that because you are professional you are also viewed as competent. Due to the Hispanic experimenter also having served as the female experimenter in Experiment 1, she may have been more comfortable interacting with participants and therefore exuded greater competence as compared to the White experimenter who was new to interacting with participants. Unfortunately, a direct manipulation check of how “competent” participants viewed the experimenters to be was not included and therefore this possibility is merely speculation. Additionally, participants indicated having greater difficulty identifying the ethnicity of the White experimenter, which may have hindered the possible difference in effects of interacting with the White experimenter versus the Hispanic.

The interaction between the experimenter ethnicity and their posed social status did not produce the hypothesized results. On the contrary, it was those participants who were exposed to the White experimenter that introduced herself as a doctoral student which endorsed the

strongest pro-Hispanic bias. This effect may have occurred because the White experimenter did not fit the prototypical physical characteristics for a White female, thereby minimizing the differences between the experimenters and making it more difficult to identify the possible effects from these interactions. Alternatively, given the fact that it was specifically the White-superior status condition that produced this result, it reinforces the notion that the White experimenter may have been perceived to be less competent by participants. The experience of interacting with an incompetent White individual that is in a higher social status is counter-stereotypical, therefore according to Social Role Theory, this would challenge the common stereotype of White-competent. On the other hand, participants did demonstrate a difficulty in accurately recalling the posed social status of the experimenters, so there is a possibility that influence of the interactions between experimenter ethnicity and social status positions was reduced.

Similar to Experiment 1, differences in biases between participant cohorts were not as expected. Specifically, it was hypothesized that participants who have been at the university for two years or more would endorse the weakest pro-White bias, yet again the incoming student cohort showed a stronger bias in the opposite direction. There is a possibility that the incoming students have grown up with experiences of counter-stereotypic Hispanic exemplars in the family or their community, which, according to Social Role Theory, would therefore produce the observed pro-Hispanic bias. The effect of the experimenter ethnicity also did not produce much of a difference between the cohorts, as the incoming students endorsed stronger pro-Hispanic bias than the long-term students for both the White and Hispanic experimenter interactions. Due to the extremely limited number of participants within each of the cells for the three-way interaction between experimenter ethnicity, social status, and student cohort, this interpretation is

cautionary and fairly limited. Like in Experiment 1, results from this experiment show a trend of the incoming students endorsing more pro-Hispanic bias across the various experimenter ethnicity and posed status conditions, whereas the long-term students showed more egalitarian like attitudes. The present university has a student ethnicity population that is predominantly Hispanic, providing an environment rich with more frequent counter-stereotypic exemplars. Therefore, it is again speculated that the observed results are due to the low number of long-term students that participated in the study. Once again, there is the alternative possibility that participants with more years of college education are not as rigid in their thinking and do more alternative perspective taking, causing them to take on more egalitarian attitudes than the incoming students.

Limitations for Experiment 2 again include the fact that the White experimenter's ethnicity was not as salient to the participants and therefore minimized the effect of ethnicity as a variable. The portrayed social status position of the experimenters also proved to not be as memorable to participants, which could suggest that this manipulation was ineffective. There is the speculation that the White experimenter was not perceived to be as competent by participants as the Hispanic experimenter. Not including a specific question assessing the experimenters' perceived competence therefore serves as a limitation because this possibility cannot be accurately ruled out. Another glaring limitation is that there was a small turnout of participants, especially for the long-term student cohort. The fact that there was only one participant in the longterm-superior-Hispanic condition severely limited the potential to make meaningful interpretations of any three-way relationship between the variables.

GENERAL DISCUSSION

The purpose of the two experiments, collectively, was to independently explore the underpinnings of the gender and ethnic stereotypes that burden Hispanic women, in order to gain insight into the intersectionality of these two roles. In their study of stereotype threat, Gonzales et al. (2002) took the alternative approach of examining the nature of this gender/ethnicity intersection within a single task/experiment. Specifically, they explored whether a “double-minority” effect might occur, such that the devaluation of one’s in-group would be greater than the individual effects of those roles. Meaning, the “double-minority” of being female and of being Hispanic would lead to a more extensive devaluing effect than the independent devaluations of being a female combined with the independent devaluations of being Hispanic. Unfortunately, previous research on racial stereotypes has tended to focus on comparisons of pro-White and pro-Black biases as opposed to differences in ethnic biases (Barden et al., 2004; Dasgupta, McGhee, Greenwald, & Banaji, 2000; Fazio et al., 1995). Furthermore, the limited number of studies that do explore ethnic biases regarding Hispanics are often from the vantage point of Whites (Weyant, 2005; Koenig & Eagly, 2014). Therefore, there was not enough previous literature available to provide a reasonable foundation to understand the possible double-minority effect female Hispanics may have in regards to perceptions of their in-group, thus leading to the necessity to examine these effects independently.

Generally speaking, the results for the two experiments were not as expected. Overall, participants endorsed a bias in favor of their in-group, or egalitarian like attitudes, instead of expressing a devaluation. An important consideration one should take is that perhaps the expected in-group devaluation effects were not observed for the independent gender and independent ethnic examination, because they only truly arise when intersected. That is to say,

perhaps in previous research female Hispanics turned to devalue their in-group not because they are women, or because they are Hispanic, but because they are a *Hispanic-women*. Following Crenshaw's (1989) theory of intersectionality, it may not be that the discrimination for each role is additive, but instead that they are compounding. Therefore, it is possible that methodological construction of this work into two separate experiments incorrectly attempts to singularize the struggles of Hispanic women, thus, inadvertently overlooks and reduces their implicit experience. It may be the case that if the experiment was instead set up using an intersectional approach that the expected Hispanic-female in-group devaluation would have been seen.

The experimenters' portrayal of peer or superior social status level did not produce a meaningful difference. However, previous research has exemplified that groups tend to be evaluated differently dependent on their status, especially in regards to racial groups (Barden et al., 2004; Lowery et al., 2001; Richeson & Ambady, 2003; Jones, 1991). Therefore, this lends to the assumption that the study had a weak manipulation of social status or insufficient power to find this effect. When examining the differences in biases for students that have been at the university for two or more years compared to incoming students, this also was not in the expected direction. In both experiments, the incoming students endorsed a stronger bias in favor of their in-group compared to the long-term students. Previous research has attested to the power of counter-stereotypic experiences in altering biases, so with greater amount of time spent on a university campus that is predominantly Hispanic and specifically predominantly female-Hispanic, the long-term cohort should have shown a greater in-group bias (Dasgupta et al., 2000; Barden et al., 2004; Richeson & Ambady, 2003). The interacting effects of social status and student cohort with the experimenter manipulations also failed to show meaningful differences.

Limitations and Direction for Future Research

Manipulations.

As previously mentioned, limitations to these experiments include the weak manipulations of social status and the lack of saliency in regards to recalling specifics about the experimenter. In order to maximize the differences between experimenter effects, future studies should utilize experimenters that most closely fit the look of the prototypical stereotype exemplar. Similarly, there is also the possibility that by arranging a longer encounter between the participants and experimenter this may serve to better emphasize their social status, making it more salient. Furthermore, in the present experiments the peer social status experimenters claimed to be a part of the McNair Scholars undergraduate program. Although the experimenter posing as a member of this program labels them as undergraduate and places them in the same student classification as the participants, there is a possibility that the participants may have viewed the experimenter as somewhat superior to themselves due to the McNair program requiring additional requirements of its members (e.g., completing an undergraduate thesis). Therefore, posing as a McNair undergraduate scholar may have weakened the effect of the peer status. For this reason, a future modification to this study might be to have the confederate pose as high school student instead. This would make the difference between the status levels much more pronounced. However, it may be difficult to find a confederate who could believably look as though they are either a high school student or a doctoral student. An easier modification could therefore be having the confederate say they are simply an undergraduate research assistant, not McNair scholar specific.

IAT stimuli.

The absence of manipulation check information also made it impossible to definitively assess whether participants were all tapping into the same concept of competence from the attribute words in the IAT. Although these attribute stimuli were borrowed from a previous study by Richeson and Ambady (2001), there is a possibility that the competence related attribute words did not accurately capture the essence of intellectual/career related competence. In their work, Richeson and Ambady provided a brief context to the participants, such that these evaluations, and therefore attributes, were in regards to the work environment. Because there was not an explanation of a certain context for competence in the present experiments, there is a possibility that participants thought of competence in a variety of ways. For example, when sorting the competence into respective genders perhaps they were thinking of competence in regards to family management or lower status work positions. Therefore, future studies should likewise provide a descriptive context for participants to elicit similar concepts of intellectual/work-related competence. Alternatively, selecting attribute stimuli that is tailored more to the specific construct of competence could ensure the test is tapping into the intended construct. For example, because these experiments were intending to look at competence in regards to intellect and higher status work positions, attribute words such as “intellectual” or “managerial” may have been more appropriate and effective.

The list of names selected as the concept stimuli were systematically controlled for frequency, ambiguity, and visual similarity, specifically from a year that a majority of the participants would have grown up with to make them more familiar. In spite of this careful selection, it could be possible that the stimuli names for Experiment 2 were not as easily distinguished as belonging to one particular ethnicity over the other. To potentially improve this

for future studies, an item-analysis should be conducted to identify any names that may have been more difficult for participants to identify and sort into its intended category.

Participants.

The overall small sample size, and specifically the lack of long-term student participants, was a severe limitation to the study. Future studies should explore different participant recruitment methods in order to ensure more data can be collected to represent long-term students. Utilizing convenience samples inherently comes with limitations, and the specific participant pool for these experiments produced several limitations. First, these participants are all college students, and therefore the results cannot generalize to Hispanic women in general. College students may be more open-minded, and being a female Hispanic attending college, the participants themselves serve as a counter-stereotypic example of their in-group. For this reason, future studies should recruit female Hispanic participants that are of varying educational attainment in order to produce more generalizable results. It would also be interesting to assess whether the participants are first-generation college students, as a possible covariate. The convenience sample of participants further served as a limitation due to their average age being 20. Individuals around this age either fall within the Generation Z or Millennial generational demographic cohort. These generational cohorts are not representative of the general population, and as such this also limits the generalizability of experiment results. Average Millennials and Generation Z individuals are described as being more diverse than previous generations (i.e., biracial, various sexualities) thereby leading them to be more open-minded compared to other generational cohorts (Pew Research Center, 2014). Individuals from this age group also tend to hold liberal views, have work initiative, and tend to be realistic in terms of work demands/expectations (Pew Research Center, 2014; Iorgulescu, 2016). Additionally, it is well

known that this generation of individuals is technologically savvy and high users of various technology platforms (Pew Research Center, 2014). Considering these generation specific attributes might also help to explain why these participants had the tendency to exhibit in-group favoring. It is possible that growing up within this generation led participants to be more open-minded, and with more frequent use of technology these individuals could possibly have gained exposure to counter-stereotypic exemplars through the internet. Future iterations of this study should utilize participants with a wider variety of ages to avoid the possibility of producing only generation specific effects.

Conclusion

Participant exposure to Hispanic versus White, and female versus male experimenters did not yield the expected results, in spite of their portrayal of peer or superior social status. Moreover, the difference in amount of time spent at a Hispanic Serving Institute did not produce a meaningful difference between participant cohorts. Nonetheless, the reviewed literature exemplifies and lays out the process of altering stereotypes, by means of more frequent exposure to counter-stereotypic exemplars. Due to the automatic nature and pervasiveness of stereotypes, it seems imperative that we continue to explore the malleability of these biases. Research seems to especially be lacking in the area of endorsed biases by minorities and marginalized groups. Despite the lack of significant results produced in the present experiments, the process was overall beneficial as it helped identify variable manipulation issues and considerations for future generalizability. Hence, future studies can look to this work for insight on needed methodological changes, to continue to build upon research in this specific domain. Ultimately, this can lead to a greater understanding of the intersectionality of the stereotyped biases Hispanic women may carry.

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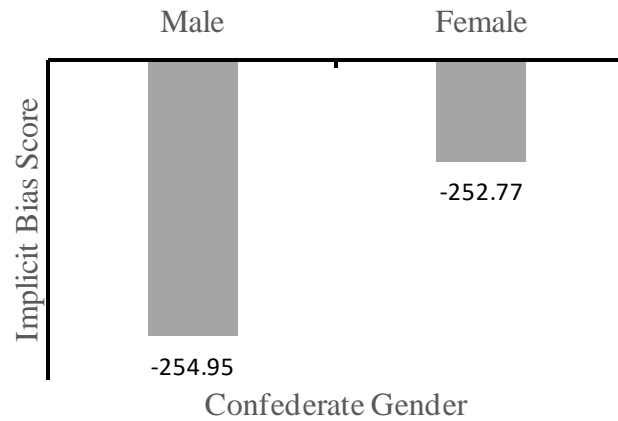
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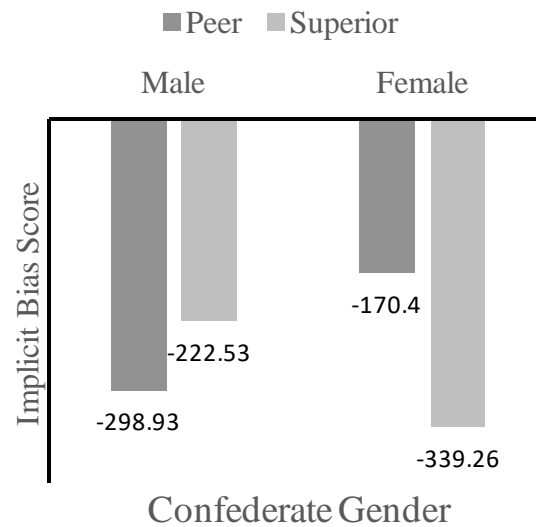
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APPENDIX A

IAT Stimuli				
Female Anglo Name	Female Hispanic Name	Male Hispanic Name	Competent	Incompetent
Hannah	Andrea	Alejandro	Productive	Stupid
Madison	Marta	Sergio	Efficient	Slow
Jessica	Alba	Pablo	Talented	Unfit
Kayla	Marina	Ignacio	Smart	Unsuitable
Emma	Beatriz	Guillermo	Capable	Stumbling
Brittany	Carmen	Fernando	Proficient	Unqualified
Allison	Blanca	Santiago	Skilled	Inept
Courtney	Sonia	Francisco	Accomplished	Unequipped
Mackenzie	Veronica	Alfonso		
Jenna	Fatima	Arturo		
Paige	Helena	Julio		
Kelly	Yolanda	Mateo		

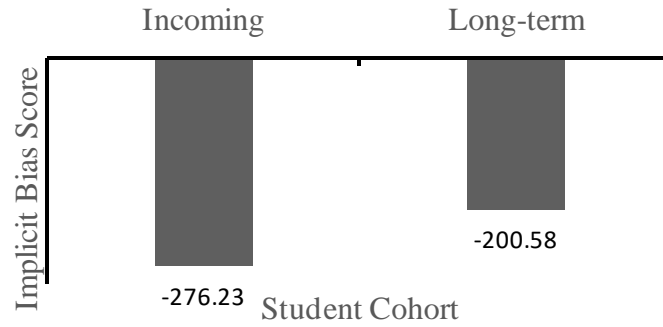


a) Influence of Gender on Implicit Gender Bias

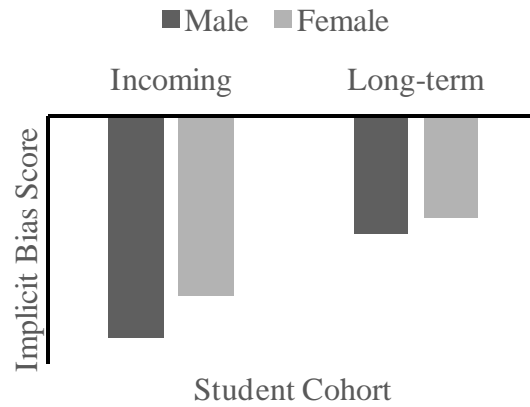


b) Influence of Social Status and Ethnicity on Implicit Ethnic Bias

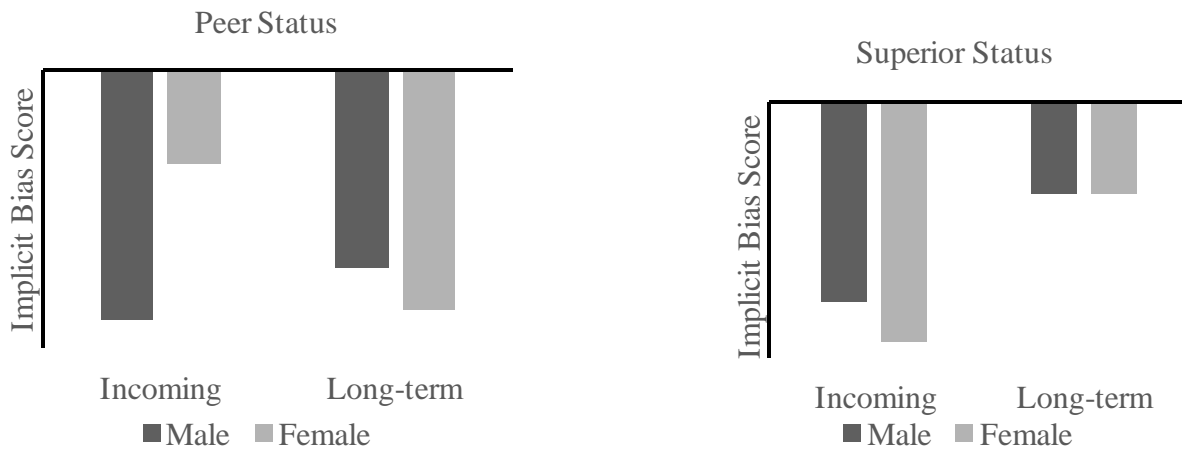
Figure 1. Average of participants' implicit ethnic bias scores. Participants endorsed nearly equal attitudes when interacting with the male and female experimenter. There was not a significant interaction between the experimenter gender and social status. However, the superior-female confederate did precipitate the strongest pro-female bias.



a) Influence of Student Cohort on Implicit Gender Bias

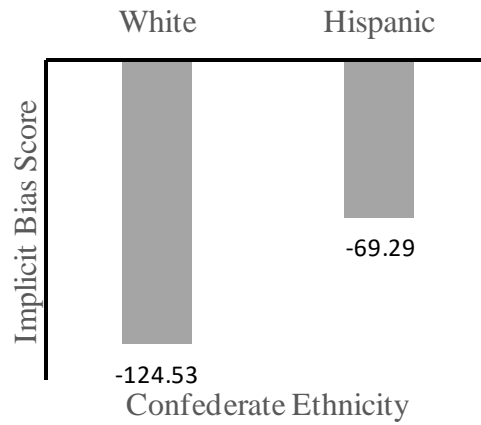


b) Interaction of experimenter gender and student cohort

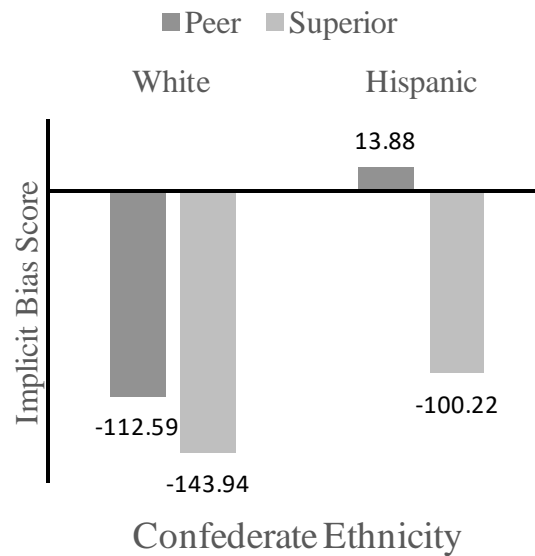


c) The influence of social status on the interaction of experimenter gender and student cohort.

Figure 2. Incoming students tended to endorse greater pro-female bias than the long-term student cohort. The incoming student cohort that interacted with the superior status female experimenter revealed the strongest pro-female implicit bias.

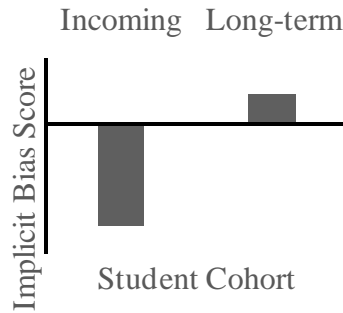


a) Influence of Experimenter Ethnicity on Implicit Ethnic Bias

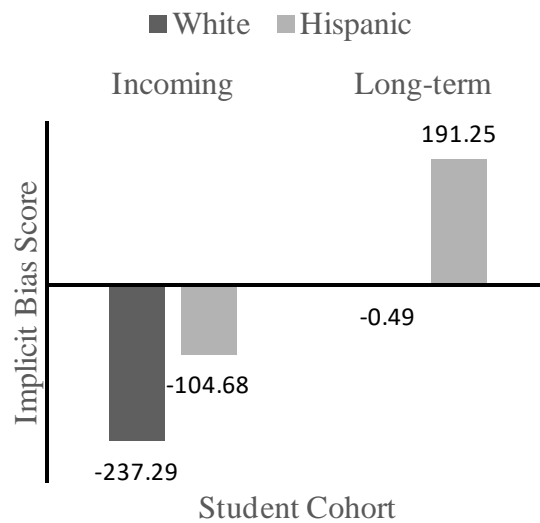


b) Influence of Social Status and Ethnicity on Implicit Ethnic Bias

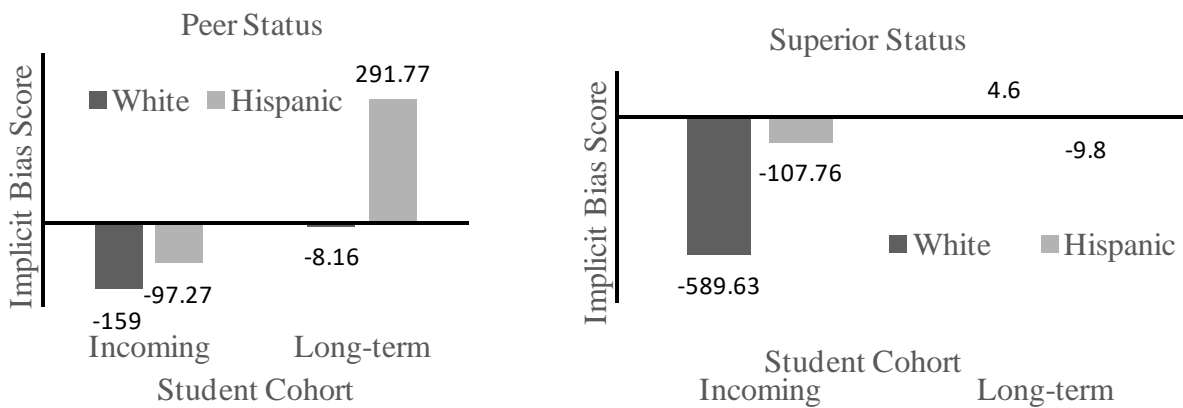
Figure 3. Participants that interacted with the White experimenter showed stronger pro-Hispanic bias. The interaction of experimenter gender and ethnicity was not significant.



a) Influence of student cohort on implicit ethnic bias



b) Interaction of experimenter ethnicity and student cohort



c) The influence of social status on the interaction of experimenter ethnicity and student cohort.

Figure 4. Incoming students tended to endorse stronger pro-Hispanic biases than the long-term cohort.